ATTACHMENT J3

Westover ARB Water Distribution System

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J3 Westover ARB Water Distribution System

J3.1 Westover ARB Overview

Westover ARB is located in Chicopee, Massachusetts, 90 miles west of Boston. The Base comprises 2,402 acres, and has approximately 150 buildings and other facilities occupying more than 1,500,000 square feet. It is home to C-5A Galaxy aircraft that are part of the 439th Military Airlift Wing.

Westover ARB has a work force of more than 570 civilians, and 480 Air Reserve technicians. In addition, more than 3,700 Air Force reservists, National Guardsmen, Marine reservists, and Navy Seabee reservists train at the Base.

Westover Air Force Base was activated in 1940 to fulfill the need for an Air Force base in the northeastern United States. It served as a bomber training base and a point of embarkation and debarkation during World War II, as a headquarters of the Military Airlift Command through 1955, as a staging point for the Berlin Airlift, and then as a major base of operations for the Strategic Airlift Command until 1974. Since that year, Westover has been an Air Reserve Base. From 1974 to 1987 C-130 aircraft were assigned to Westover ARB; in 1987, C-5A Galaxy aircraft were assigned to the Base and remain there today.

Projected future mission requirements have necessitated the renovation or demolition of older facilities and the construction of new facilities. The Westover ARB Capital Improvements Program (CIP) emphasizes consolidating existing facilities and maximizing their utilization as much as possible. Over the next 5 years, key projects planned for Westover ARB, if implemented, will increase the total square footage of buildings and facilities on Base by approximately 2 to 3 percent.

J3.2 Water Distribution System Description

J3.2.1 Water Distribution System Fixed Equipment Inventory

The Westover ARB water distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts, to the point of demarcation defined by the Right of Way. The system may include, but is not limited to, pipelines, valves, fire hydrants, storage facilities, exterior backflow devices, pumps, and meters. The actual inventory of items sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the water distribution system privatization are:

- Backflow preventers

J3.2.1.1 Description

The City of Chicopee supplies potable water to Westover ARB to satisfy domestic, irrigation, and industrial requirements. The City currently supplies potable water through three locations:

- On the east side of the installation at the Westover ARB property line, where water flows through the Building 7980 main meter, which is approximately 2,500 lf west of the property line on an easement.
- Galaxy Avenue meter (a backup auxiliary service meter to the Base which is normally closed, near Building 5200.
- Westover Club (Building 6640) which consists of two separate city metered services.

There are also two locations where the water lines are valved off from the City connections, they are:

- Burke Street, an unmetered and valved-off tie-in.
- Connection near the Central Gate (Building 3135), an unmetered and valved–off tie-in.

Base water supply valves are monitored by the Westover ARB SCADA system. The SCADA system monitoring is located at Building 5600 Bio-environmental. The SCADA interconnects remote terminal units (RTUs) via modems and dedicated telephone lines at five locations: Building 7980, the Galaxy Road valve vault, Building 7084 (Fire Station), the water storage tank and Building 5600. SCADA information includes the water levels at the elevated storage tank and pressure and flow rate at the Building 7980 meter. The SCADA system is included with the water distribution system privatization.

The Westover ARB elevated storage tank. located in a 50-foot square fenced enclosure, has a capacity of 500,000 gallons. The elevated tank contains high and low level indicators which are used to open and close the main water supply valve in Building 7980. The elevated storage tank has a sacrificial anode cathodic protection system.

The distribution system consists of polyethylene (PE), cement-lined ductile iron and copper piping, water valves, fire hydrants and meters. Water mains and service connections are at depths of approximately 4 to 6 feet below grade.

Potable water enters the Base through an asbestos cement slip-lined 16-inch (approximately 13.5-inch-inside-diameter) transmission main located near former meter Building 606, and is metered at Building 7980. The City operates a separate chemical water treatment system on the City main that feeds this line which is upstream of Building 7980. A flow signal from the Building 7980 water meter is used to set the chemical treatment system rates. The City provides water treatment chemicals for chlorine addition and pH/corrosion control.

A new potable water distribution system project was completed in 1997. Prior to completion of the new system, the onsite Base water system was connected at several points to the Chicopee water system. Water demand inflow to the Base averaged 200,000 gallons per day (gpd). Most of this flow was later found to be water that flowed through the Base potable

water distribution system and back to the Chicopee system. When the new system was completed, the metered connections allowed only flow into the Base system, eliminating the flow-through. As a result, water use decreased to an average daily use of 100,000 gallons (50 percent of the previous flow). After the new system was constructed, Base staff observed water quality problems that they believed were associated with the new system and the elimination of flow-through water. The elimination of flow-through water caused the residence time of water in the distribution piping and the storage tank to increase from a relatively short period of time to many days or weeks. Base personnel have identified the increased residence time, summer warming of water in the distribution system, and lack of proper chemical treatment as responsible for the lack of chlorine residual in the water and the presence of heteratrofic bacteria in the water.

In response to these water quality problems, the Base implemented water blow off of approximately 1.5 to 5 gallons per minute (gpm) each at six metered hydrants. In addition, Westover Bio-environmental staff monitor and test water quality and flows.

A 1998 Corps of Engineers report discusses inspection results regarding the loss of the asphaltic coating from the interior of the new cement-lined ductile iron pipe. Inspection of the pipe shows that the asphaltic coating on some pipe sections is being lost. A *Water Main Assessment*, prepared in July 2000, provides a more detailed analysis of the asphaltic seal-coating loss and its potential effects.

A November 1998 report by URS Consultants, *Operational Summary for Interim Remedial Action – Water Supply Main*, included a brief evaluation of the water utility system's capacity to provide fire flow water demands. The current system is capable of meeting fire flow demands for residential facilities and hangars when the elevated water tank is on-line.

J3.2.1.2 Inventory

Table 1 provides a general listing of the major water distribution system fixed assets for the Westover ARB water distribution system included in the sale

TABLE 1
Fixed Inventory
Water Distribution System Westover ARB

Item	Size	Quantity	Unit	Approximate Year of Construction
PE pipe	2-in.	300	LF	2002
Asbestos Cement slip lined with PE pipe	14-in.	10,200	LF	1997
Cement lined ductile iron pipe	3-in.	768	LF	1995
	4-in.	759	LF	1995
	6-in.	450	LF	1993
	6-in.	17,782	LF	1995
	6-in.	150	LF	2001
	6-in.	250	LF	2002
	8-in.	21,165	LF	1995

TABLE 1
Fixed Inventory
Water Distribution System Westover ARB

Item	Size	Quantity	Unit	Approximate Year of Construction
	12-in.	11,668	LF	1995
	16-in.	198	LF	1994
Cast iron gate valve	2-in.	2	EA	2002
	3-in.	14	EA	1995
	4-in.	5	EA	1995
	6-in.	1	EA	1993
	6-in.	134	EA	1995
	6-in.	1	EA	2001
	6-in.	1	EA	2002
	8-in.	58	EA	1995
	12-in.	22	EA	1995
	16-in.	5	EA	1997
Copper pipe	2-in.	1,543	LF	1995
	1 ½ -in.	816	LF	1995
	1 ½ -in.	80	LF	2002
	1-in.	546	LF	1995
	¾ -in.	78	LF	1995
Fire hydrants (4 ½-in. valve size)		67	EA	1995
		2	EA	1997
SCADA System		1	EA	1999
Elevated storage tank	500,000 gal.	1	EA	1941
Elevated storage tank foundation		1	EA	1941
Cathodic protection for the elevated storage tank		1	EA	1995
Valve station building 1312 (wood frame structure)	150 sf	1	EA	1941
Elevated storage tank fencing, chain link		200	LF	1970
Blow-off valve	14-in.	1	EA	1997
Air relief valve	14-in.	2	EA	1997
Check valve	14-in.	1	EA	1997

TABLE 1
Fixed Inventory
Water Distribution System Westover ARB

Item	Size	Quantity	Unit	Approximate Year of Construction
Service meter	1-in.	2	EA	1995
	3-in.	1	EA	1995
	4 ½ -in.	6	EA	1995

Notes:
EA = each
gal = gallon
in. = inch
lf = linear feet
PE = polyethylene

J3.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
Water Distribution System Westover ARB

Qty	Item	Description	Make/Model	Remarks
No spare parts are included with the system to be privatized.				

TABLE 3
Specialized Vehicles and Tools
Water Distribution System Westover ARB

Qty	Description	Location	Maker
No specialized vehicles or tools are included with the system to be privatized.			

J3.2.3 Water Distribution System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Water Distribution System Westover ARB

Qty	Item	Description	Remarks
1 set	Drawings	General Base Comprehensive Plan (G TAB) Water Distribution System	
1 ea	Report	Water Main Assessment Report July 2000	
1 ea	Report	Operation Summary for Interim Remedial Action – Water Supply Main Report 1998	
1 ea	Report	1998 Corps of Engineers Water Main Assessment Report	
1 ea	Manual	SCADA System Manual	
1 set	Drawings	1993 Westover Water System Improvements, Westover ARB Drawings	

J3.3 Specific Service Requirements

The water utility system at Westover ARB is currently classified by the Massachusetts Department of Environmental Protection (DEP) as a distribution system and does not require a DEP water supply system permit. The DEP has indicated that the new owner of the water utility system would be required to notify the DEP of a change in ownership, and may be required to obtain transfer of ownership approval or amend an existing permit to include the distribution system, depending on the specifics of the sale. The DEP has also indicated that the regulatory approval process for a transfer of ownership of a water utility system takes approximately 1 month.

The service requirements for the Westover ARB water distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Westover ARB water distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

- The Contractor shall operate the water distribution system IAW 310 CMR 22.00
- The Contractor shall keep meter books with monthly consumption and demand (if applicable) for each meter reading. Meter books shall also include building address or facility number, meter number, previous month readings, current month readings, multipliers for each meter, total monthly consumption, points of contact for meter questions, and procedure for converting meter reads into consumption (including multipliers).
- The Contractor shall own and maintain all obstruction lighting on water towers. The government shall retain ownership of airfield beacon lighting. The government will maintain all beacon lighting and associated equipment. IAW the Right of Way, the

Contractor shall allow the Government access to all beacon lighting mounted on buildings or water towers.

- IAW the Right of Way, the Contractor shall allow the Government access to install, operate, and maintain any communication equipment, beacon lights and other Government equipment on the elevated water storage tank.
- IAW the Right of Way, the Contractor shall allow the Government access to all existing commercial cellular communications equipment mounted on the elevated water storage tank.
- The Contractor shall enter into a Memorandum of Understanding with the Westover ARB Fire Department for fire protection of all facilities included in the purchase of the utility. The Memorandum of Understanding shall be completed during the transition period and a copy provided to the Contracting officer.
- The Contractor shall abide by Westover ARB fire protection requirements. The utility system purchased by the Contractor includes the valve station Facility 1312. This facility may or may not include fire alarm systems. Where required by federal, state or local regulations, the Contractor shall maintain the fire alarm system for all facilities owned and operated by the Contractor. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.
- The Contractor shall perform flow testing and maintenance of fire hydrants and water lines IAW National Fire Protection Association standards.
- When new meters are installed, to include meters installed for temporary service connections, the Contractor shall include with the meter reading report a separate report identifying the new meters installed during the prior month. The Contractor shall coordinate with the Government to determine the format of the report to be submitted.
- The Contractor shall operate, maintain, and test the Base water system IAW applicable federal, state, and local rules and regulations for potable water systems. The Contractor shall provide the Contracting Officer with a copy of any and all testing information and reports related to the water distribution system that is submitted to any agency.
- The Contractor shall maintain and operate the cathodic protection system for the elevated water storage tank.
- The Contractor shall maintain FAA and Air Force markings on water tanks and shall coordinate with the Base Civil Contracting Officer before changing the exterior coating color scheme for the elevated water storage tank.
- Contractor shall obtain all necessary authorizations and permits and shall submit to the Base Civil Contracting Officer for approval before adding any equipment to the water tower for private or commercial use.

J3.4 Current Service Arrangement

Westover ARB acquires water (commodity supply) from The City of Chicopee Water Department. Water treatment is performed by the City of Chicopee Water Department.

Total water consumption for Westover ARB in FY 2002 was approximately 61,300 kGals. The monthly average water consumption was approximately 5,100 kGals. The highest monthly consumption for the year was approximately 7,700 kGals in October. The lowest monthly consumption for the year was approximately 1,150 kGals in February.

Westover ARB is a Community Public Water System (PWS ID# 106003).

J3.5 Secondary Metering

J3.5.1 Existing Secondary Meters

Table 5 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings for all secondary meters IAW Paragraph C.3 and J3.6 below.

TABLE 5
Existing Secondary Meters
Water Distribution System Westover ARB

Meter Location	Meter Description (Type)
Bowling Alley, Building 5402	
Massachusetts National Guard Building 3102	
Hydrant Meter, near Building 8012	
Hydrant Meter, Fire Training Area	
Hydrant Meter, near Building 7040	
Hydrant Meter, at south end of Recall Avenue	
Hydrant Meter, near Building 5102	
Hydrant Meter, near Building 5600	

J3.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3 and J3.6 below.

TABLE 6
New Secondary Meters
Water Distribution System Westover ARB

Meter Location	Meter Description
Army Recruiting, Building 3288	
Corp of Engineers, Building 3287	

J3.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

   Name: Base Civil Engineering
   Address: Westover ARB
   250 Patriot Avenue
   Chicopee, MA 01022-1670

2. Outage Report. The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

   Name: Base Civil Engineering
   Address: Westover ARB
   250 Patriot Avenue
   Chicopee, MA 01022-1670

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all identified secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

   Name: Base Civil Engineering
   Address: Westover ARB
   250 Patriot Avenue
   Chicopee, MA 01022-1670

4. Water Quality Testing Report. The Contractor's monthly water quality testing report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Water quality testing reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

Name: Base Civil Engineering
Address: Westover ARB
250 Patriot Avenue
Chicopee, MA 01022-1670

J3.7 Water Conservation Projects

IAW Paragraph C.3, Utility Service Requirement, the following projects have been implemented by the Government for conservation purposes.

- There are no water conservation projects associated with the system to be privatized.

J3.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Westover ARB boundaries.

J3.9 Off-Installation Sites

No off-installation sites are included in the sale of the Westover ARB water distribution system.

J3.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** provides a listing of service connections and disconnections required upon transfer.

TABLE 7
Service Connections and Disconnections
Water Distribution System Westover ARB

Location	Description
There are no service connections or disconnections required for the system to be privatized.	

J3.11 Government Recognized System Deficiencies

Table 8 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Westover ARB water distribution system. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AC.

TABLE 8
System Deficiencies
Water Distribution System Westover ARB

Project Location	Project Description
System-wide	The Westover ARB water distribution system cannot maintain water quality to required standards without the 5 gpm blow off at several critical locations. Base personnel have identified the increased residence time, summer warming of water in the distribution system, and lack of proper chemical treatment as responsible for the lack of chlorine residual in the water and the presence of heteratrofic bacteria in the water. The base currently performs regular fire hydrant flushing to maintain water quality in the system.